DRAFT

Lake Ontario Toxics Management Plan

Summary
and
Issues for
Public Discussion

March 1988
Lake Ontario Toxics Committee

Dear Interested Citizen:

A draft Lake Ontario Toxics Management Plan has been developed under a four-party agreement among the environmental agencies of the United States, Canada, New York State, and the Province of Ontario. With the ultimate goal of virtual elimination of toxics in the Lake, the Plan outlines the means that the four parties will use to reduce toxic discharges and restore the health of the ecosystem.

Your ideas and opinions are important to us. Please review the enclosed summary and issues for discussion and let us know how the plan could be improved. Copies of the complete draft document can be obtained from Kevin Bricke or Rob Sampson (see below) or reviewed at the locations listed on the back.

Your written comments should be sent to:

Kevin Bricke, Deputy Director, Water Management Division
USEPA
26 Federal Plaza
New York, New York 10278

or

R. C. J. Sampson
Great Lakes Environment Office
Environment Canada
25 St. Clair Avenue East
Toronto, Ontario M4T 1M2

Please see the enclosed meeting announcement for dates and locations of public workshops to review the draft plan.

We welcome your comments, questions and participation in writing or at the public meetings.

Sincerely,
The Lake Ontario Toxics Committee

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Enclosure

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Prepared by the Lake Ontario Toxics Committee

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SUMMARY—DRAFT
LAKE ONTARIO TOXICS MANAGEMENT PLAN

Introduction

Lake Ontario is an important drinking water, recreational, transportation and food resource to two nations, the United States and Canada. Discharges of wastewater to the Great Lakes and their tributaries, along with deposition from the air and polluted runoff from land have contaminated the Lake Ontario ecosystem with toxic organic chemicals and metals. Some of the these toxic substances have accumulated over the years to levels high enough to restrict people's use of important food and recreational resources. There is a further possibility that toxic substances are adversely affecting the health of fish and wildlife in Lake Ontario.

The draft Lake Ontario Toxics Management Plan has been developed under a four party agreement among the environmental agencies of the United States and Canada, New York State and the Province of Ontario. With the ultimate goal of virtual elimination of toxics in the lake, the plan outlines the means that the four parties will use to reduce toxic discharges and restore the health of the ecosystem.

The draft Lake Ontario Toxics Management Plan consists of the plan itself, including detailed tables on United States and Canadian planned actions, plus four appendices entitled:

I. Lake Ontario and the Lake Ontario Basin
II. Toxics Problem in Lake Ontario
III. Toxics Loadings to Lake Ontario
IV. Existing Programs

The Toxics Problem in Lake Ontario

The Fishery. The negative impact of toxics is most evident in impaired use of the Lake Ontario fishery. Some fish in the lake have accumulated amounts of toxics which are judged likely to be harmful to those who do not limit their fish consumption. For this reason, both the Province of Ontario and the State of New York advise people to limit consumption of certain species.

Toxic chemicals which are known to exceed enforceable standards or non-enforceable government criteria in some species of Lake Ontario fish include: PCBs, mercury, mirex, chlordane, dioxin, DDT, dieldrin and hexachlorobenzene.

Ecosystem. The effects of current levels of toxic chemicals on natural populations in Lake Ontario are not well understood. Evidence has linked toxic chemical pollution to deformities and impaired reproduction in fish-eating birds. These problems were prevalent in the Lake Ontario Basin in the mid 1970's. However, incidence of these problems has declined coincident with bans and use restrictions on selected chemicals such as DDT and PCB. Despite this progress, present studies show that the Lake Ontario ecosystem is still stressed and that the presence of toxic chemicals may be a contributing factor.

Drinking Water. Chemicals in treated drinking water rarely exceed applicable standards and guidelines. Authorities consider the health implications to be negligible.

Solution to Lake Ontario's Toxics Problem

1. Goals

Reduction of Toxics Entering the Lake. The short-term goal of the draft plan is to reduce the discharge of toxics to the lake. This goal is considered short-term because it relies on techniques which already exist and programs which are in place or planned for the near future. (See Table 1.)

Achievement of Protective Ambient Levels.* The intermediate goal of the draft plan is the attainment and maintenance of ambient levels of toxics that will not cause adverse impacts on human health and the ecosystem. This goal requires two steps: creation of ambient standards low enough to protect humans and the lake ecosystem from harm, and expansion of existing toxics controls where water or biota concentrations of any chemical exceed the ambient standard.

Virtual Elimination of Toxics. The long-term goal of the draft plan is virtual elimination of persistent toxic substances in the lake, as stated in the Great Lakes Water Quality Agreement.

2. The Plan

Today's Programs. The governments of the United States and Canada, the State of New York, and the Province of Ontario have a number of programs which are reducing the amounts of toxic contaminants reaching Lake Ontario.

The draft Lake Ontario Toxics Management Plan emphasizes increasing compliance with existing programs and adding new programs as they are needed. (See Table 1.)

Geographic Areas of Special Concern. Management plans are currently being developed for geographic areas around Lake Ontario that have been identified as having significant environmental problems from toxics. Controlling toxics at these locations is expected to bring about reductions of toxics in Lake Ontario as a whole.

Major planning programs affecting Lake Ontario are the Niagara River Toxics Management Plan and Remedial Action Plan (RAPs) for seven Areas of Concern identified by the International Joint Commission (IJC).

The U.S.—Canada Niagara River Toxics Management Plan is an agreement among the four parties to greatly reduce the movement of the toxics into the Niagara River. The plan includes a commitment for a 50 per cent reduction in discharge of selected chemicals.

A total of seven RAPs will be developed, three by New York State and four by Environment Canada and the Province of Ontario. Each RAP will include: an analysis of existing information to determine use impairments and the sources of pollutants; recommended remedial actions; identification of responsible parties; schedules for completion, and systems for tracking the success of the RAP. Public consultation is an essential element of the RAP process.

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*In this report, "ambient levels" refer to concentrations of chemicals in water, sediment and biota throughout the lake. Measurements are taken at areas beyond the immediate influence of discharges.

Future Approach. In moving toward the virtual elimination of persistent toxic substances, future toxics controls will place increased emphasis on the ambient condition of the Lake Ontario ecosystem, aiming to keep pollution low enough to avoid harm to humans and the environment. The draft plan uses a chemical-by-chemical approach, proposing that chemicals be grouped on the basis of whether or not the information exists about the presence or concentration of the chemical in the lake, whether any standards or guidelines exist to define acceptable ambient levels, and whether or not a chemical exceeds an ambient standard or guideline.

The draft plan identifies seven possible categories of chemicals and a strategy for each. For example, for chemicals found to exceed an enforceable standard, the strategy focuses on control. Where standards or criteria do not exist or are inadequate, they will be developed or improved.

For chemicals where ambient data and enforceable standards are already available, the four agencies will attempt to develop a mass-balance model. The model will provide an accounting of chemicals entering and leaving the lake by various pathways, as well as a systematic process for predicting the effects of proposed corrective actions. This mass balance model will serve as a basis for chemical-specific management plans.

Finally, the draft plan lays out a strategy for developing an ecosystem approach to ensure protection of human health and the environment. While attainment and maintenance of standards on a chemical-by-chemical basis is expected to result in adequate protection, the draft plan calls for development of ecosystem objectives and assessment of the effectiveness of the chemical-by-chemical approach.

Communication and Reporting. Public participation is an important part of the Lake Ontario Toxics Management Plan. This draft of the plan will receive extensive public review. As the plan is updated, public participation will be continually solicited and encouraged. The regular meetings of the Coordination Committee, composed of senior officials of the four agencies overseeing implementation of the plan, will be open to the public. Status reports on activities and progress will be released to the public, technical reports and data will be made available, contact networks and mailing lists will be developed, and public participation will be sought in workshops, briefings or meetings.

Status of the Plan. The current version of the Lake Ontario Toxics Management Plan is a draft for public review. As the draft undergoes public comment, the four parties will continue to expand the categorization of chemicals and improve the quantification of chemical sources. As each updated version is completed, it will be available for review at the following locations:

United States: Locations Where the Plan May be Reviewed:

U.S. Environmental Protection Agency
Public Information Office
Carborundum Centre
345 Third Street, Suite 530
Niagara Falls, New York 14303
(716) 285-8842

New York Department of Environmental Conservation regional offices:

NYSDEC — Region 6
317 Washington Street
Watertown, New York 13601
(315) 785-2244

NYSDEC — Region 7
7481 Henry Clay Boulevard
Liverpool, New York 13088
(315) 428-4497

NYSDEC — Region 8
7274 E. Avon-Lima Road
Avon, New York 14414
(716) 226-2466

NYSDEC — Region 9
600 Delaware Avenue
Buffalo, New York 14202
(716) 847-4550

University Libraries:

Drake Library
SUNY Brockport
Brockport, New York 14420

Collection Division Office
Butler Library
SUNY Buffalo
1300 Elmwood Avenue
Buffalo, New York 14222

Great Lakes Program
229 Jarvis Hall
SUNY Center Buffalo
Buffalo, New York 14214

Moon Library
Room 9
SUNY Environmental Forestry
Syracuse, New York 13210

Penfield Library
SUNY Oswego
Oswego, New York 13216

Acquisitions Department
Educational Resources Center
Clarkson University
Potsdam, New York 13676

Canada: Locations Where the Plan May be Reviewed

Great Lakes Environment Office
Environment Canada
25 St. Clair Avenue East
Toronto, Ontario
M4T 1M2
(416) 973-8632

Intergovernmental Relations Office
Environment Ontario
40 St. Clair Avenue West
Toronto, Ontario
M4V 1M2
(416) 323-5097

Ontario Ministry of the Environment Regional Offices:

Southeastern Region
133 Dalton Avenue
Kingston, Ontario
K7L 4X6

Central Region
4th Floor
7 Overlea Boulevard
Toronto, Ontario
M4H 1A8
(416) 424-3000

West Central Region
12th Floor
119 King Street West
Hamilton, Ontario
L8N 329
(416) 521-7640

Table 1. Agency Programs for Toxics Control in Lake Ontario Basin

US EPA — NYS DEC

Program	Existing	Planned
A. Direct Industrial Discharges	Permits for all toxics dischargers (39 major and 171 significant minor) include BAT and water quality limits.	Revise permits each 5 years to include latest BAT effluent guidelines and water quality standards.
Compliance	36 of 39 majors in compliance (92%) with toxics limits.	Seek 100% compliance
B. Indirect Industrial Discharges	14 approved local pretreatment (state/federal) programs, general and specific discharge prohibitions. EPA acts as the control authority in the remaining areas.	Seek 100% compliance from Significant Industrial Users with pretreatment limits.
C. Municipal Discharges	Permits for all 41 majors, some with toxics limits, are in place.	Revise permits each five years.
Compliance	34 majors are in compliance.	Bring all majors into compliance.
D. Hazardous Waste Facilities (active)	State and federal programs in place regulating active hazardous waste facilities; 50 facilities covered in L. Ontario basin. All of the 10 landfill sites are moving toward closure of land disposal activities.	Final permit decisions Land disposal 1988 Incinerators 1989 Storage/treatment. 1992
Compliance	4 of 10 land disposal facilities found out of compliance; 3 have signed consent orders to close. DEC is waiting for a reply to draft consent order from other one.	3 non-complying facilities to be closed by 1988. Corrective action will be taken at fourth site.
E. Hazardous Waste Sites (inactive)	Cleanup programs underway on 7 NPL hazardous waste sites. Plans in place for evaluation and cleanup of 246 other sites.	Completion of remediation for all hazardous waste sites.
F. Combined Sewer Overflows	There are 13 CSO systems in the L.O. basin. State/federal grant and permit programs are used to correct CSO discharges causing water quality violations.	
Compliance	2 of 13 systems have been identified as causing water quality problems.	1 to be abated by 1994 1 to be abated under plan now being developed.
G. Storm Water Discharges	Permits in place for certain industrial facilities.	Regulations being developed to expand permitting of facilities. Industrial and large municipal storm sewer permits to be issued by 1991, compliance by 1992; small municipal storm sewer permits to be issued mid-1990's, compliance by 1996.
H. Nonpoint Sources	Control activities include: pesticide regulations, spill response, road salt storage, septic tank controls, soil and water conservation BMPs, etc.	DEC will prepare a comprehensive nonpoint source assessment and management program in 1988.

BAT: Best Available Technology
NPL: National Priority List
BMPs: Best Management Practices

Table 1. Agency Programs for Toxics Control in Lake Ontario Basin

ONTARIO MOE

Program	Existing	Planned
A. Direct Industrial Discharge	Effluent guidlines are set by control orders or Certificates of Approval. 8 industries under control orders requiring reductions beyond current levels. 4 industries with limits set by control order. Development of MISA program began in June 1986.	Monitoring regulations for 9 industrial sectors will be promulgated by 1988/89. Effluent Limit regulations will be in place by 1990-91.
B. Indirect Industrial Discharges	Indirect discharge to STPs regulated by municipal by-laws which prescribe limits for most metals and some organics.	MISA program to develop more extensive pretreatment limits.
C. Municipal Discharges	The 31 sewage treatment plants are secondary facilities (activated siudge with phosphorus removal). These plants reduce some of the toxic organics.	Monitoring regulation will be promulgated by 89/90; effluent limit compliance regulation by 90/91.
D. Waste Disposal Sites (all are landfills including sanitary landfills)		
1. Active	Active sites (130) have Certificates of Approval and new landfill sites have to undergo public hearing.	Information to assess potential hazard at each site will be obtained.
2. Closed	A systematic review of 127 sites started in 1980 and will continue until 1990.	Report will be used to identify actions required.
E. Combined Sewer Overflows	18 municipalities served by combined sewers. Provincial grant program to assist municipalities with CSO's. Construction of new CSO's prohibited.	The municipalities are to prepare and implement plans to control CSO's.
F. Storm Water Runoff	Pollution control of point source stormwater is voluntary; Provincial grants are available.	Model sewer-use by-law being developed proposes pollution control on industrial point source discharges. Municipality to prepare master drainage plan to include stormwater quality controls.
G. Nonpoint Sources	Currently voluntary controls: MOE registers pesticides, licenses applicators, and encourages sound use through educational programs.	The Province of Ontario encourages farmers to file and follow integrated farm management plans and improved waste management and soil control.

MISA: Municipal-Industrial Strategy for Abatement
STP: Sewage Treatment Plants

Issues for Discussion

Draft Lake Ontario Toxics Management Plan

The following issues for discussion will help us obtain public comments on key aspects of the draft plan. Please feel free to comment on any other aspect of the plan. You can send us suggestions or join in one of the public workshops. Written comments received by April 30, 1988 will be considered as we put the plan in final form.

Send comments to:

Kevin Bricke, Deputy Director
Water Management Division
US EPA
26 Federal Plaza
New York, New York
U.S.A. 10278

or

R.C.J. Sampson
Great Lakes Environment Office
Environment Canada
25 St. Clair Avenue East
Toronto, Ontario
CANADA M4T 1M2

1. The Toxics Problem in Lake Ontario (p. 1)

The draft Lake Ontario Toxics Management Plan concludes that:

a. In fish flesh, toxics are a problem because they accumulate to levels unsafe for human consumption;
b. The ecosystem may be under stress from chemical contamination, but more information is needed to understand what is taking place;
c. In treated drinking water, toxics are considered by health agencies not to be a problem;
d. Toxics in the lake and toxics continuing to enter the lake are a problem because they make it impossible to achieve the Great Lakes Water Quality Agreement goal of virtual elimination of persistent toxics.

Questions:

What is your reaction to these problem statements?

What, if anything, would you add or change?

Are there other problems that should be included in the plan?

2. Goals (p. 2)

The draft plan outlines the following goals:

1. Short-term: Reduction of chemical inputs
2. Intermediate: Achievement of protective ambient levels
3. Long-term: Virtual elimination of persistent toxics in the lake

Questions:

How appropriate is reduction of toxic discharges as an initial goal?

How appropriate is achievement of protective ambient levels as a next step?

What does "virtual elimination of persistent toxics" mean to you?

How reasonable is it to approach the goal of "virtual elimination of persistent toxics in the lake" through achievement of the short-term and intermediate goals?

3. Today's Programs (p. 2 and Table 1.)

In New York State, present pollution controls are based principally on the use of technology to prevent toxic substances from entering the environment. Controls such as wastewater discharge permits and hazardous site remedial plans usually specify use of the best technologies available. Where it can be shown that application of the most effective technology is not sufficient to protect public health or the environment, additional control measures are required.

In Ontario, effluent guidelines are set in legally-enforceable Control Orders or Certificates of Approval, based on both technology and water quality factors. The Provincial Ontario Muncipal-Industrial Strategy for Abatement (MISA), begun in June, 1986, will set monitoring regulations and effluent limit regulations based on best available technology (BAT).

The draft plan describes our present programs and the activities that will be undertaken in the near future to fill gaps in toxics control programs identified in the plan.

Questions:

Do you feel the existing and planned activities will achieve a reduction in toxic chemical inputs to the lake?

Do you have recommendations for additional things that should be done?

4. Geographic Areas of Special Concern (p. 2)

The plan recommends focusing corrective activities on specific geographic areas around Lake Ontario.

Questions:

Will this approach have a significant impact on the Lake as a whole?

Are there other locations that should be considered as areas of concern? If so where and why?

What should be done to improve these planning efforts?

5. Future Approach (p. 3)

Future controls will limit toxics on a chemical-by-chemical basis to ensure protection of human health and the ecosystem. Ecosystem objectives will be established to evaluate the effectiveness of the chemical-by-chemical approach.

Questions:

What do you see as advantages and disadvantages of a chemical-by-chemical approach?

What factors should be considered when setting ecosystem objectives?

What ecosystem objectives would you suggest be considered?

Who should be involved in the process of devising ecosystem objectives and how?

6. Communication and Reporting (p. 3)

The plan calls for active communication and public participation. Coordination Committee meetings will be held to oversee implementation of the plan. The public will be invited to attend.

Questions:

What additional activities would you recommend?

What informational materials would be most helpful?

Where should coordination committee meetings be held? How often? Is this a useful vehicle?

7. General

What is your overall impression of the recommendations outlined by the four parties in this draft plan?